JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS G 1235-2 : 2021

(JISF)

Iron and steel — Determination of antimony — Part 2: Spectrophotometric method after extraction of brilliant green complex

ICS 77.080.01

Reference number : JIS G 1235-2 : 2021 (E)

Date of Establishment: 2021-05-20

Date of Public Notice in Official Gazette: 2021-05-20

Investigated by: Japanese Industrial Standards Committee

Standards Board for ISO area

Technical Committee on Metal and Inorganic Materials

JIS G 1235-2 : 2021, First English edition published in 2021-12

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

Printed in Japan HN

Contents

Page

1 Scope ····· 1
2 Normative references ····· 1
3 Terms and definitions ····· 1
4 General ····· 1
5 Summary ····· 1
6 Reagents ····· 2
7 Weighing of sample ····· 2
8 Operation ····· 3
8.1 Preparation of sample solution ····· 3
8.2 Colouring ····· 4
8.3 Measurement of absorbance ····· 4
9 Blank test ····· 4
10 Preparation of working curve ····· 4
11 Calculation ····· 4
12 Precision ····· 5

Foreword

This Japanese Industrial Standard has been established by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee according to the proposal for establishment of Japanese Industrial Standard submitted by The Japan Iron and Steel Federation (JISF) with a draft being attached, based on the provision of Article 12, paragraph (1) of the Industrial Standardization Act. This Standard partially replaces **JIS G 1235** : 1981, which has been withdrawn.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, published patent application or utility model rights.

JIS G 1235 series consists of the following 2 parts under the general title *Iron and steel-Determination of antimony* :

Part 1: *Rhodamine B spectrophotometric method after extraction of chloride*

Part 2: *Spectrophotometric method after extraction of brilliant green complex*

Iron and steel — Determination of antimony — Part 2 : Spectrophotometric method after extraction of brilliant green complex

1 Scope

This Japanese Industrial Standard specifies the spectrophotometric method after extraction of brilliant green complex among the methods for determination of antimony in iron and steel.

This method is applicable to determination of antimony content (mass fraction) of 0.001 % or over up to and including 0.02 % in iron and steel.

NOTE The determination range in **JIS G 1235** series is shown in Table 1.

Table 1 Determination range in JIS G 1235 series

Standard No.	Determination range [mass fraction (%)]
JIS G 1235-1	0.001 or over up to and incl. 0.02
JIS G 1235-2	0.001 or over up to and incl. 0.02

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS G 1201 *Iron and steel — General rules for analytical methods*

JIS Z 8402-6 *Accuracy (trueness and precision) of measurement methods and results — Part 6 : Use in practice of accuracy values*

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS G 1201**, Clause **3** apply.

4 General

General requirements for determination shall conform to **JIS G 1201**.

5 Summary

The sample is decomposed with aqua regia, nitric acid is reduced to nitrous acid with zinc and the treatment of white fume of sulfuric acid is carried out. Then, it is dissolved in hydrochloric acid, antimony is oxidized with sodium nitrite, and residual nitrous acid is decomposed with urea. Iron precipitation formation is controlled with so-